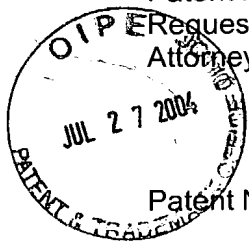


Patent No. 6,743,742

Request for Cert. of Correction dated July 21, 2004
Attorney Docket No. 3617-011765

10,072,801



IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

Patent No. : 6,743,742 Confirmation No. 3651
Inventor(s) : J. LaRocco et al.
Issued : June 1, 2004
Title : Method of Partially Embedding Non-Woven Fiber
Mat To Reinforcing Fibers Impregnated With A
Thermoplastic Resin and Composition Therefrom
Examiner : Arti R. Singh
Customer No. : 28289

REQUEST FOR CERTIFICATE OF CORRECTION OF PATENT
FOR PTO MISTAKE (37 C.F.R. 1.322(a))

Commissioner for Patents
P.O. Box 1450
Alexandria, VA 22313-1450

Certificate

JUL 30 2004

ATTENTION: Decision and Certificate of Correction Branch
Patent Issue Division

of Correction

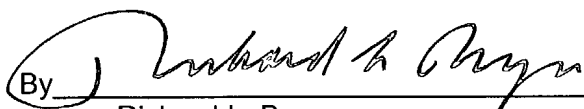
Sir:

In accordance with 35 U.S.C. §254, we attach hereto Form PTO/SB/44 and a copy of proof of PTO's error and request that a Certificate of Correction be issued in the above-identified patent. The following error appears in the patent as printed:

Column 8, Lines 56-57, Claim 1, "non-woven woven fiber" should read
--non-woven fiber--.
(See Application, Page 15, Claim 1, Lines 11-12)

Respectfully submitted,

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UNITED STATES PATENT AND TRADEMARK OFFICE
CERTIFICATE OF CORRECTION

PATENT NO. : 6,743,742
DATED : June 1, 2004
INVENTOR(S) : LaRocco et al.

It is certified that error appears in the above-identified patent and that said Letters Patent is hereby corrected as shown below:

Column 8, Lines 56-57, Claim 1, "non-woven woven fiber" should read
--non-woven fiber--.

{W0132282.1}

MAILING ADDRESS OF SENDER:

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PATENT NO. 6,743,742

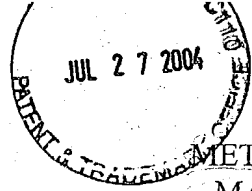
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This collection of information is required by 37 CFR 1.322, 1.323, and 1.324. The information is required to obtain or retain a benefit by the public which is to file (and by the USPTO to process) an application. Confidentiality is governed by 35 U.S.C. 122 and 37 CFR 1.14. This collection is estimated to take 1.0 hour to complete, including gathering, preparing, and submitting the completed application form to the USPTO. Time will vary depending upon the individual case. Any comments on the amount of time you require to complete this form and/or suggestions for reducing this burden, should be sent to the Chief Information Officer, U.S. Patent and Trademark Office, U.S. Department of Commerce, P.O. Box 1450, Alexandria, VA 22313-1450. DO NOT SEND FEES OR COMPLETED FORMS TO THIS ADDRESS. SEND TO: Attention Certificate of Corrections Branch, Commissioner for Patents, P.O. Box 1450, Alexandria, VA 22313-1450.

If you need assistance in completing the form, call 1-800-PTO-9199 and select option 2.

2 AUG 2004



METHOD OF PARTIALLY EMBEDDING NON-WOVEN FIBER
MAT TO REINFORCING FIBERS IMPREGNATED WITH A
THERMOPLASTIC RESIN AND COMPOSITION THEREFROM

CROSS-REFERENCE TO RELATED APPLICATION

[0001] This application claims the benefit of United States Provisional Application Serial No. 60/267,499, filed February 8, 2001.

BACKGROUND OF THE INVENTION

Field of the Invention

[0002] The invention relates to partially embedding through impregnation a non-woven fiber mat to a reinforcing fiber by fully impregnating the reinforcing fiber with thermoplastic and partially impregnating the non-woven fabric mat, thereby leaving exposed at least part of the surface of the non-woven mat for mechanical bonding.

Description of Related Art

[0003] Bonding to thermoplastic materials is currently accomplished by a variety of surface treatments that chemically modify the surface of the material, including chemical treatments of primers, flame treating or corona treating.

[0004] Two problems arise from using these methods. First, the process requires a second processing step that involves additional equipment and cost. Second, the bond is a chemical bond that occurs only at the surface of the interface with two materials.

[0005] The prior art bonds a non-woven fiber mat or fabric to the surface of materials, such as steel or aluminum, using a variety of adhesives. The exposed fibers of the non-woven mat or fabric are then available for subsequent bonding.

[0006] It is an object of this invention to provide a process for the mechanical attachment of a non-woven fiber mat onto the surface of a thermoplastic sheet to provide a means for the subsequent bonding of the thermoplastic sheet to a variety of materials using a variety of different processes.

WE CLAIM:

1. A composite sheet comprised of:
 - a) a base layer of reinforcing fibers impregnated with a thermoplastic resin;
 - b) a mat adjacent to the layer wherein the mat is made of a non-woven fiber;
 - c) wherein the non-woven fiber mat is partially impregnated with the thermoplastic resin of the base layer thereby creating a mechanical bond between the base layer and the mat thereby providing a bondable surface with the non-impregnated surface of the non-woven fiber; and
 - d) wherein the thermoplastic has a melting point less than the melting point of the reinforcing fibers in the base layer and less than the melting point of the non-woven fiber mat.
2. The composite sheet according to claim 1 wherein between 25-75% of the non-woven fiber is impregnated with thermoplastic resin from the base layer.
3. The composite sheet according to claim 1 wherein the thermoplastic resin is a thermoplastic resin selected from the group consisting of ABS, nylon, polyester, polyolefin, polypropylene, PVC and polystyrene.
4. The composite according to claim 1 wherein the non-woven fiber of the mat is a fiber selected from the group consisting of fiberglass, polyester, and nylon.
5. The composite sheet according to claim 1 wherein the reinforcing fibers are from the group consisting of woven and non-woven fibers.
6. The composite sheet according to claim 1 wherein the fiber in the base layer is fiber having a pattern from the group consisting of woven mat, chopped mat, random mat and randomly scattered fibers.